Lower Colorado River Multi-Species Conservation Program

Balancing Resource Use and Conservation

Cibola Valley Conservation Area

2018 Annual Report

February 2020

Work conducted under LCR MSCP Work Task E5

Lower Colorado River Multi-Species Conservation Program Steering Committee Members

Federal Participant Group

Bureau of Reclamation
U.S. Fish and Wildlife Service
National Park Service
Bureau of Land Management
Bureau of Indian Affairs
Western Area Power Administration

Arizona Participant Group

Arizona Department of Water Resources
Arizona Electric Power Cooperative, Inc.
Arizona Game and Fish Department
Arizona Power Authority
Central Arizona Water Conservation District
Cibola Valley Irrigation and Drainage District
City of Bullhead City
City of Lake Havasu City
City of Mesa
City of Somerton
City of Yuma
Electrical District No. 3, Pinal County, Arizona
Golden Shores Water Conservation District
Mohave County Water Authority
Mohave Valley Irrigation and Drainage District
Mohave Water Conservation District
North Gila Valley Irrigation and Drainage District
Town of Fredonia
Town of Thatcher
Town of Wickenburg
Salt River Project Agricultural Improvement and Power District
Unit "B" Irrigation and Drainage District
Wellton-Mohawk Irrigation and Drainage District
Yuma County Water Users' Association
Yuma Irrigation District
Yuma Mesa Irrigation and Drainage District

Other Interested Parties Participant Group

QuadState Local Governments Authority
Desert Wildlife Unlimited

California Participant Group

California Department of Fish and Wildlife
City of Needles
Coachella Valley Water District
Colorado River Board of California
Bard Water District
Imperial Irrigation District
Los Angeles Department of Water and Power
Palo Verde Irrigation District
San Diego County Water Authority
Southern California Edison Company
Southern California Public Power Authority
The Metropolitan Water District of Southern California

Nevada Participant Group

Colorado River Commission of Nevada
Nevada Department of Wildlife
Southern Nevada Water Authority
Colorado River Commission Power Users
Basic Water Company

Native American Participant Group

Hualapai Tribe
Colorado River Indian Tribes
Chemehuevi Indian Tribe

Conservation Participant Group

Ducks Unlimited
Lower Colorado River RC&D Area, Inc.
The Nature Conservancy

Lower Colorado River Multi-Species Conservation Program

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Lower Colorado River
Multi-Species Conservation Program
Bureau of Reclamation
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ACRONYMS AND ABBREVIATIONS

AZGFD	Arizona Game and Fish Department
CVCA	Cibola Valley Conservation Area
FY	fiscal year
HCP	Habitat Conservation Plan
LCR MSCP	Lower Colorado River Multi-Species Conservation Program
lidar	light detection and ranging
MCWA	Mohave County Water Authority
Reclamation	Bureau of Reclamation

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1.0 INTRODUCTION

This annual report summarizes all activities that have occurred at the Cibola Valley Conservation Area (CVCA) from October 1, 2017, through September 30, 2018, which is Federal fiscal year (FY) 2018. Use of Colorado River water is presented for the calendar year, January 1 through December 31, 2018, consistent with the Colorado River Accounting and Water Use Report: Arizona, California, and Nevada (Bureau of Reclamation [Reclamation] 2019).

1.1 Background

In 2002, Reclamation secured 1,309 acres of land within the Cibola Valley Irrigation and Drainage District in southwestern Arizona and established the CVCA. In September 2007, the property was conveyed to the Arizona Game and Fish Department (AZGFD) through an agreement among the AZGFD, Reclamation, the Mohave County Water Authority (MCWA), the Hopi Tribe, and The Conservation Fund. Under the agreement, the AZGFD retains title to the property and leases the land and water rights to Reclamation until April 5, 2055, as part of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP). In September 2008, a Memorandum of Understanding was signed between Reclamation and the AZGFD that assures availability of land and water resources for the 50-year term of the LCR MSCP. Large habitat conservation areas such as the CVCA are developed over a number of years, with restoration activities divided into phases.

2.0 CONSERVATION AREA INFORMATION

2.1 Purpose

The cottonwood-willow (*Populus fremontii-Salix* spp.) and honey mesquite (*Prosopis glandulosa*) land cover types created within the CVCA will be managed for southwestern willow flycatchers (*Empidonax traillii extimus*), yellow-billed cuckoos (*Coccyzus americanus occidentalis*), and other species covered under the LCR MSCP.

2.2 Location

The CVCA is located in Arizona in Reach 4, within the Cibola Valley Irrigation District, approximately 15 miles south of Blythe, California. It is within the historic floodplain of the lower Colorado River and adjacent to River Miles 99 to 105 on the Arizona side (figure 1).

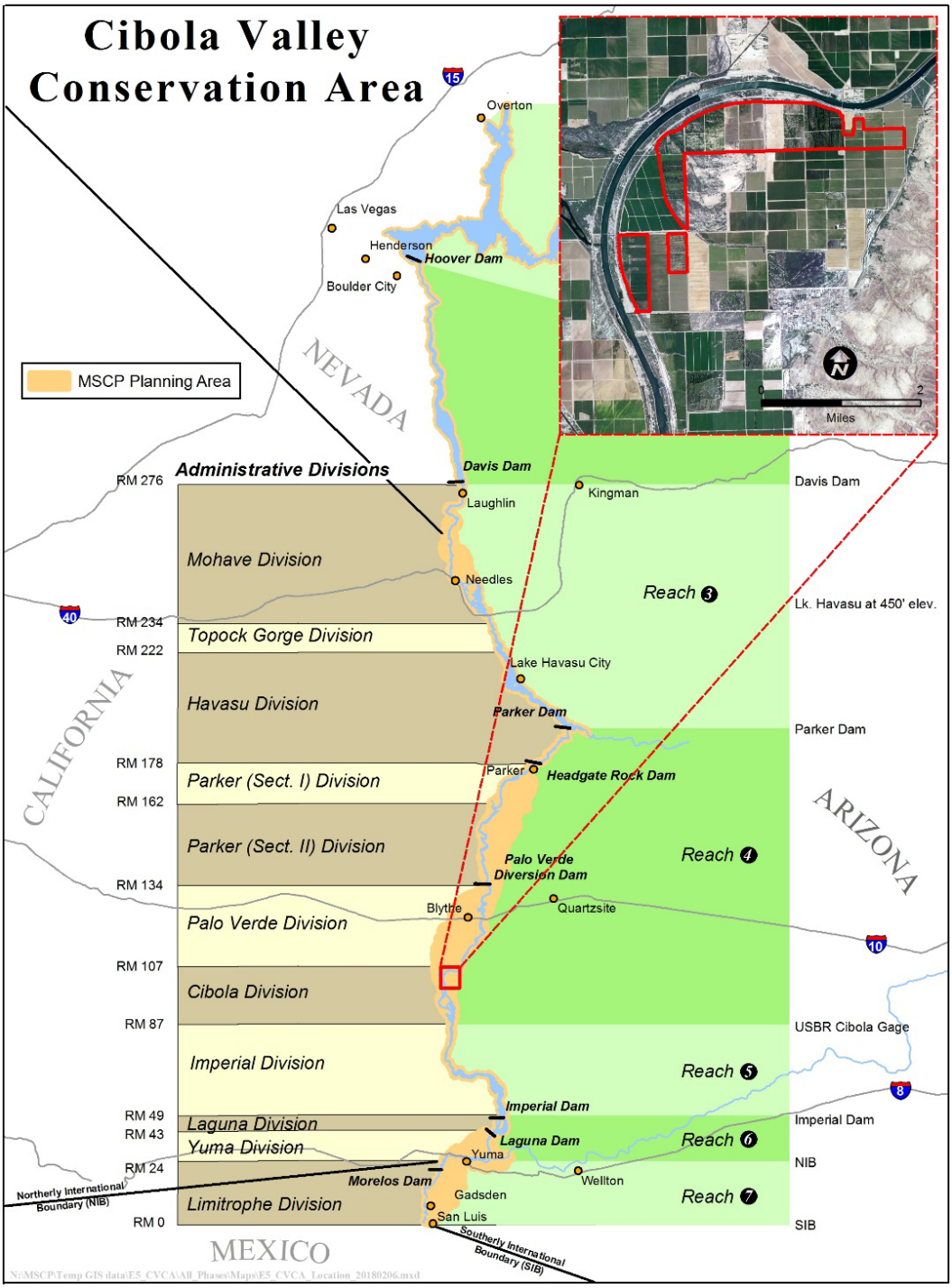

Figure 1.—Location of the CVCA.

2.3 Landownership

The AZGFD acquired CVCA land and water rights in 2007 and 2008 through multiple agreements involving the AZGFD, Reclamation, the MCWA, The Conservation Fund, and the Hopi Tribe. Through these agreements, the AZGFD acquired CVCA fee title and water entitlements and agreed to manage the site. The entitlements are subject to an existing long-term lease of the land and water rights to Reclamation through April 5, 2055, as part of the LCR MSCP. Short-term leases of the land to farmers for crop production also exist on portions of the acquired land.

2.4 Water

For the long term, a 2,838 acre-foot-per-year diversionary right of 4th priority Colorado River water is available (table 1). Additionally, a 7,747 acre-foot diversionary right of combined 4th, 5th, and 6th priority Colorado River water is currently available for lease each year from the MCWA to the LCR MSCP to accommodate the higher water diversions required to establish habitat. In 2018, an additional 750 acre diversionary right of 5th priority was available for use on the conservation area.

Table 1.—Water entitlement and priority

Term	Entitlement	Priority
Long term		
AZGFD entitlement	2,719 acre-feet/year	4th
Reclamation entitlement	119 acre-feet/year	4th
Long-term total	**2,838 acre-feet/year**	
Short term		
Multi-year lease from MCWA entitlement	5,997 acre-feet/year	4th
Multi-year lease from MCWA entitlement	750 acre-feet/year	5th
Multi-year lease from MCWA entitlement	1,000 acre-feet/year	6th
Short-term total	**7,747 acre-feet/year**	

2.5 Agreements

A Land Use Agreement was signed in 2007 by Reclamation and the AZGFD to secure land and water for the CVCA for the remainder of the 50-year LCR MSCP. The agreement outlines the rights and responsibilities of each partner in the project's development and maintenance.

2.6 Public Use

The AZGFD has the authority, and is the lead, to regulate hunting and recreation uses pursuant to AZGFD statutes, regulations, and policies at the CVCA. In cooperation with Reclamation, the AZGFD coordinates its public use and related activities so they are compatible with management of the site for the LCR MSCP. Low-impact public uses such as wildlife watching, sport fishing, and education/outreach are expected at the CVCA; however, these uses may be regulated depending on future occupation of the habitat by listed species.

2.7 Law Enforcement

The AZGFD is responsible for law enforcement at the CVCA. A LCR MSCP Conservation Area Specific Fire Management & Law Enforcement Strategy was finalized for the CVCA (LCR MSCP 2010).

2.8 Wildfire Management

Federal, State, and local fire agencies, either by existing management agreements or mutual aid agreements, provide wildland fire suppression, incident dispatch, fire investigation, fuels reduction, and potential fire restrictions. The full range of suppression strategies are available to managers provided that selected options do not compromise firefighter or public safety, are cost effective, consider the benefits of suppression and the values to be protected, and are consistent with resource objectives (LCR MSCP 2010).

3.0 HABITAT DEVELOPMENT

Established land cover types being managed for LCR MSCP covered species are shown on figure 2.

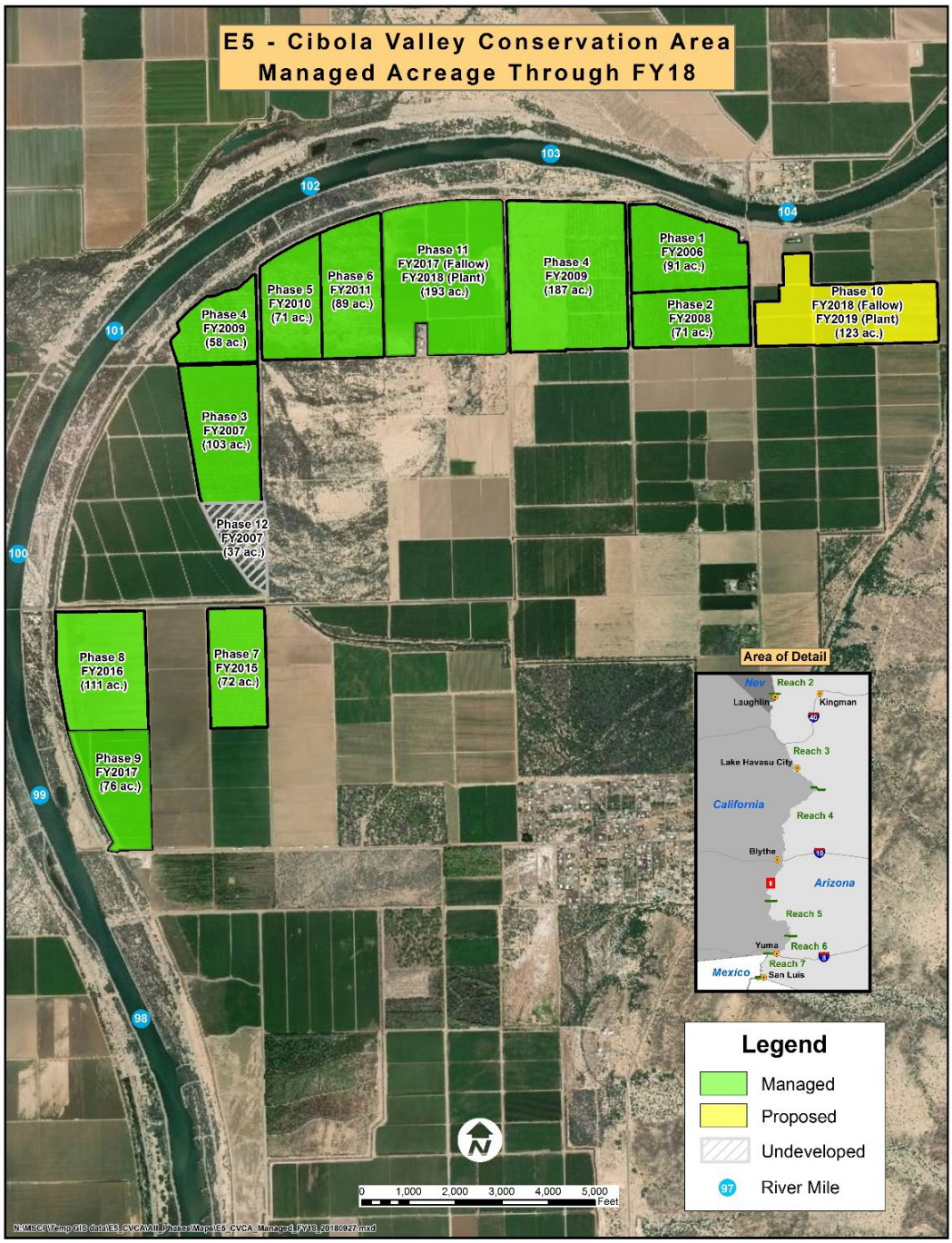

Figure 2.—CVCA managed acreage through FY18.

3.1 Planting

During FY18, restoration activities at the CVCA consisted of irrigation, maintenance, monitoring activities, and the planting of Phase 11. Honey mesquite trees previously planted in Phases 4, 5, 6, and 7 have established to the point where irrigation is no longer needed and any future irrigation of these phases will only occur on an as-needed basis.

Phase 11 was planted utilizing a furrow planting approach in April. The phase was divided into checks and planted with honey mesquite in east/west and north/south furrows to funnel the water directly to the tress versus flood irrigating the entire field (figure 3). The furrows are arranged with moderate sinuosity perpendicular to the delivery canals within the fields. Irrigation will stop about 2 years after planting in areas where honey mesquite trees were planted within furrows because the trees have established and roots are reaching the water table. Future planting of phases within the CVCA will continue through FY19 based on the current plan.

3.2 Irrigation

Flood irrigation methods are used to provide water to each field. Irrigation amounts applied in each phase were based on monthly invoices prepared by the Cibola Valley Irrigation and Drainage District. Irrigation scheduling was recommended by the contract farmer along with input from Reclamation. The total irrigation amount utilized at the CVCA for calendar year 2018 was 3,297 acre-feet.

3.3 Site Management

Normal road maintenance, such as watering, grading, and gravel road base replacement was completed as needed.

3.3.1 Weed Management

Invasive weeds and plant material adjacent to the irrigation canals were removed to protect the integrity of the concrete lining. Disking was done quarterly along the levee road. The disking extended 50 feet into the fields to reduce the risk of fire. Disking was also conducted between the furrows in Phase 7 due to increased presence of invasive species, including goathead (*Tribulus terrestris*) and pigweed (*Amaranthus* spp.). Invasive species were also treated with herbicide in the furrows.

3.3.2 Nursery Management

Coyote willow (*Salix exigua*) poles were collected from the nursery.

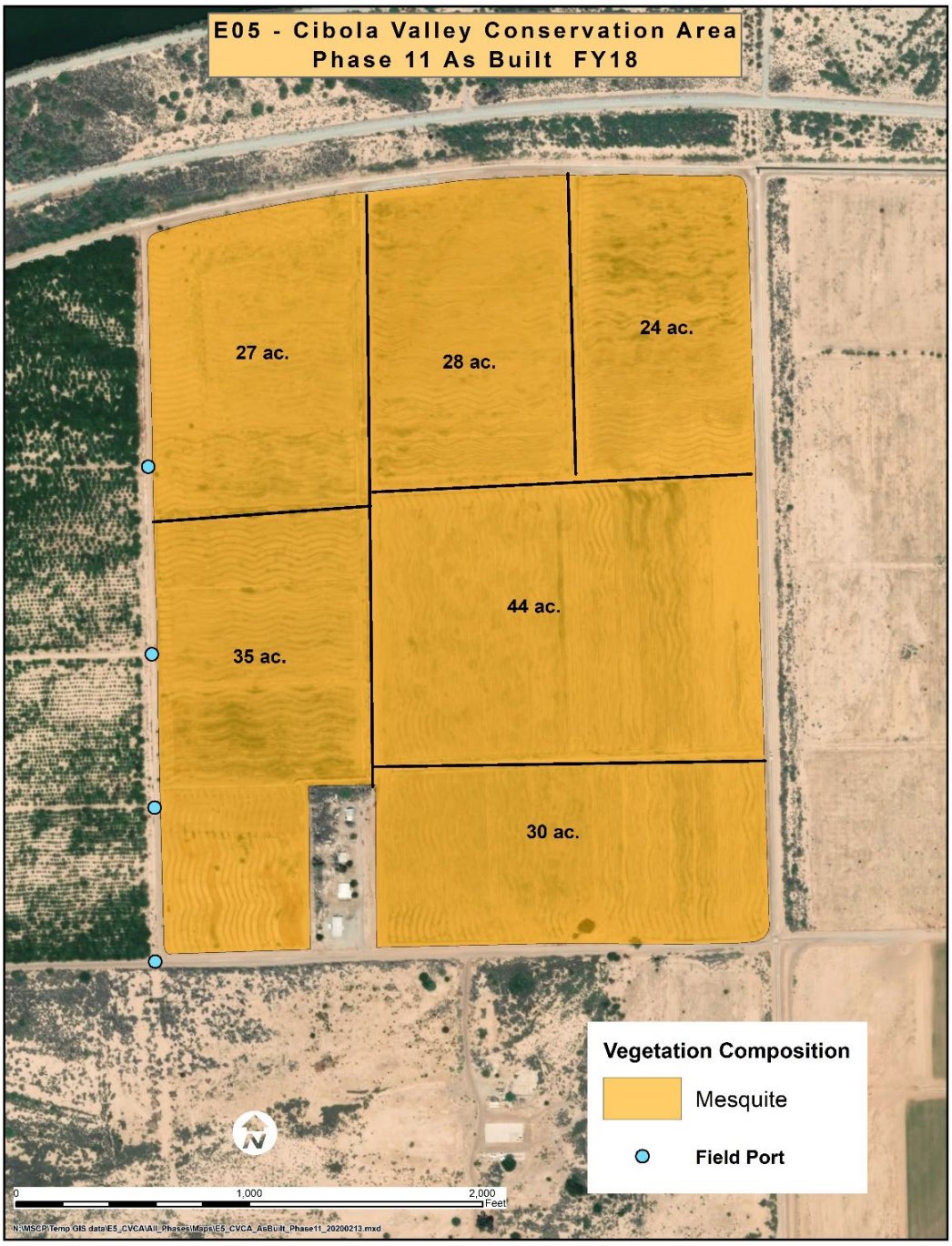

Figure 3.—CVCA Phase 11 as-built drawings of the vegetation composition and planting design.

4.0 MONITORING

4.1 Avian Monitoring

Avian monitoring in FY18 included surveys for southwestern willow flycatchers, yellow-billed cuckoos, and riparian breeding birds.

4.1.1 Southwestern Willow Flycatcher Surveys

Surveys to detect presence of southwestern willow flycatchers were conducted five times during FY18 in cottonwood-willow habitat. No breeding or resident southwestern willow flycatchers were detected; only migrant willow flycatchers (*Empidonax traillii*) were detected, all prior to June 14. Most birds detected after June 24 or individuals detected repeatedly before June 24 are considered to be southwestern willow flycatchers. Birds detected before June 24 and those detected only once after June 24 are considered migrant willow flycatchers (McLeod and Pellegrini 2019).

4.1.2 Yellow-billed Cuckoo Surveys

Four surveys for yellow-billed cuckoos were conducted within the riparian portion of the CVCA. During the first survey period (June 15 – June 30), there were two cuckoo detections. Two surveys were conducted during the second survey period (approximately July 1 – July 31) and resulted in 14 detections. Between approximately August 1–15, there was one detection of a yellow-billed cuckoo (Parametrix, Inc., and Southern Sierra Research Station 2018).

Breeding was confirmed at the CVCA in FY18. Due to the behavior of this species, detections alone do not indicate the number of cuckoos present, nor do detections confirm breeding. The number, timing, and location of detections, along with behaviors observed may be used to estimate abundance, distribution, and/or breeding status. There were two confirmed pairs, no probable pairs, and three possible pairs breeding at the CVCA in FY18 (Parametrix, Inc., and Southern Sierra Research Station 2019). Two nests were found incidental to surveys: one in Phase 8 and one in Phase 9.

4.1.3 General Bird Surveys

Bird surveys were conducted to detect breeding LCR MSCP riparian bird species and other territorial riparian bird species. Surveys were conducted within areas of the cottonwood-willow and honey mesquite land cover types that were of adequate growth to support breeding birds. General bird surveys resulted in the detection of

15 species (223 territories) of birds breeding within the surveyed plots. The Arizona bell's vireo (*Vireo bellii arizonae*) was confirmed breeding (SWCA Environmental Consultants 2019).

Table 2 shows the number of breeding territories of LCR MSCP covered species in FY18 (SWCA Environmental Consultants 2019).

Table 2.— Number of breeding territories per LCR MSCP covered species[1] at the CVCA, FY18

LCR MSCP covered species	Number of confirmed breeding pairs
Arizona bell's vireo	1

[1] Number of breeding territories refers to the number of territories that are within the sampled area for pairs that were confirmed breeding. Partial territories are possible, as the amount of each territory within the sampled area was estimated to be 0.25, 0.5, 0.75, or 1.0.

4.2 Small Mammal Monitoring

4.2.1 Bat Monitoring

Acoustic survey methods were used to monitor bats in order to document the presence of species using the CVCA. Two long-term monitoring stations (CVCA1 and CVCA2) were operated during June, July, and August 2018. Western red bats (*Lasiurus blossevillii)*, western yellow bats (*Lasiurus xanthinus*), and California leaf-nosed bats (*Macrotus californicus*) were detected (table 3). Table 3 summarizes the total number of nights the four LCR MSCP species were detected in FY18 (Mixan and Diamond 2019).

Table 3.—LCR MSCP bat detections by month at CVCA acoustic stations CVCA1 and CVCA2, FY18

Month	Number of nights recorded (CVCA1/ CVCA2)	Total nights detected							
		Western red bat		Western yellow bat		California leaf-nosed bat		Pale Townsend's big-eared bat[1]	
		CVCA1	CVCA2	CVCA1	CVCA2	CVCA1	CVCA2	CVCA1	CVCA2
June	20/30	1	6	5	1	0	1	0	0
July	31/31	4	2	3	0	0	5	0	0
August	31/31	9	15	6	7	0	3	0	0

[1] Genetic analyses on the pale Townsend's big-eared bat indicate that the lower Colorado River is likely in the range of the Pacific Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) rather than the pale Townsend's big-eared bat (Piaggio and Perkins 2005). The bats recorded along the lower Colorado River will be referred to as pale Townsend's big-eared bats in this report, as the nomenclature change has not yet been verified by the U.S. Fish and Wildlife Service.

4.3 MacNeill's Sootywing Skipper Monitoring

MacNeill's sootywing skippers (*Pholisora gracielae* = *Hesperopsis gracielae* [MacNeill]) were detected at the CVCA during surveys conducted in April 2018 (Hill and Smith 2019).

5.0 HABITAT CREATION AND CONSERVATION MEASURE ACCOMPLISHMENT

5.1 Vegetation Monitoring

Vegetation data were collected in FY18 using light detection and ranging (lidar). Lidar measures the vegetation structure throughout the canopy and provides the ability to identify structural diversity and successional growth stages. Conservation area vegetation will be evaluated on a periodic basis using lidar to ensure the habitat is meeting species' requirements. A procedure to analyze and provide vegetation structure metrics will be developed, and the results will be presented in future reports.

5.2 Evaluation of the CVCA

The Final Habitat Creation Conservation Measure Accomplishment Tracking Process was finalized in October 2011 (LCR MSCP 2011). All areas within the CVCA were designed to benefit covered species at the landscape level.

To meet species habitat creation requirements, the Habitat Conservation Plan (HCP) provides goals for habitat creation based on land cover types. These land cover types are described using the Anderson and Ohmart vegetation classification system (Anderson et al. 1976, 1984a and 1984b). Thirteen species with habitat creation goals have creditable acres at the CVCA. These species, including their corresponding conservation measure acronyms, are: southwestern willow flycatcher (WIFL1), western red bat (WRBA2), western yellow bat (WYBA3), Colorado River cotton rat (CRCR2), yellow-billed cuckoo (YBCU1), elf owl (*Micrathene whitneyi*) (ELOW1), gilded flicker (*Colaptes chrysoides*) (GIFL1), Gila woodpecker (*Melanerpes uropygialis*) (GIWO1), vermilion flycatcher (*Pyrocephalus rubinus*) (VEFL1), Arizona Bell's vireo (BEVI1), Sonoran yellow warbler (*Dendroica petechia sonorana* = *Setophaga petechia sonorana*) (YWAR1), summer tanager (*Piranga rubra*) (SUTA1), and MacNeill's sootywing skipper (MNSW2) (table 4).

Table 4.—Species-specific habitat creation conservation measure total acres for 2018[1]

Species-specific habitat creation conservation measure	WIFL1	WRBA2	WYBA3	CRCR2	YBCU1	ELOW1	GIFL1	GIWO1	VEFL1	BEVI1	YWAR1	SUTA1	MNSW2
Creditable acres in 2018	0[2]	0	0	0	0	0	0	0	0	0	0	0	0
Total, including previous years	**0**	**670**	**670**	**670**	**265**	**670**	**265**	**265**	**670**	**670**	**265**	**265**	**405**

[1] The habitat creation accomplishment analysis was not performed for FY18 due to lidar data not being available.

[2] Although the CVCA provides the appropriate structure type (cottonwood-willow I–IV) as defined in WIFL1, the LCR MSCP is in the process of gathering the appropriate hydrologic data to determine saturated soils, moist soils, or slow-moving water. Once this has been determined, the CVCA will be evaluated.

6.0 ADAPTIVE MANAGEMENT RECOMMENDATIONS

Adaptive management relies on the initial receipt of new information, the analysis of that information, and the incorporation of the new information into the design and/or direction of future project work (LCR MSCP 2007). The Adaptive Management Program's role is to ensure habitat creation sites are biologically effective and fulfill the conservation measures outlined in the HCP for 27[1] covered species and to determine if they potentially benefit 5 evaluation species. Post-development monitoring and species research results will be used to adaptively manage habitat creation sites after initial implementation. Once monitoring data are collected over a few years, and then analyzed for the CVCA, recommendations may be made through the adaptive management process for site improvements in the future.

There are no adaptive management recommendations for the CVCA at this time.

[1] The northern Mexican gartersnake (*Thamnophis eques megalops*) was added as a covered species by an amendment to the Program Documents on March 5, 2018.

LITERATURE CITED

Anderson, B.W. and R.D. Ohmart. 1976. Vegetation Type Maps of the Lower Colorado River from Davis Dam to the Southerly International Boundary, Final Report. Submitted to the Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

_____. 1984a. Vegetation Management Study for the Enhancement of Wildlife Along the Lower Colorado River, Final Report. Submitted to the Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

_____. 1984b. Lower Colorado River Riparian Methods of Quantifying Vegetation Communities to Prepare Type Maps, Final Report. Submitted to the Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

Bureau of Reclamation (Reclamation). 2019. Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, Calendar Year 2018. Bureau of Reclamation, Lower Colorado Region, Boulder City, Nevada.

Hill, J. and J. Smith. 2019. Monitoring of the MacNeill's Sootywing Skipper and its Habitats, 2018 Annual Report. Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada

LCR MSCP (see Lower Colorado River Multi-Species Conservation Program).

Lower Colorado River Multi-Species Conservation Program (LCR MSCP). 2007. Final Science Strategy. Bureau of Reclamation, Boulder City, Nevada.

_____. 2010. Lower Colorado River Multi-Species Conservation Program Fire Management & Law Enforcement Strategy. Bureau of Reclamation, Boulder City, Nevada.

_____. 2011. Final Habitat Creation Conservation Measure Accomplishment Tracking Process. Bureau of Reclamation, Boulder City, Nevada.

McLeod, M.A. and A.R. Pellegrini. 2019. Southwestern Willow Flycatcher Monitoring Along the Lower Colorado River and Tributaries, 2018 Annual Report. Submitted to the Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada, by SWCA Environmental Consultants, Flagstaff, Arizona, under contract No. 140R3018C0010.

Mixan, R. and J.M. Diamond. 2019. Post-Development Acoustic Monitoring of LCR MSCP Bat Species, 2018 Annual Report. Submitted to the Lower Colorado River Multi-Species Conservation Program, Boulder City, Nevada, by the Arizona Game and Fish Department, Phoenix, Arizona, under cooperative agreement No. R16AC00067.

Parametrix, Inc., and Southern Sierra Research Station. 2019. Yellow-billed Cuckoo Surveys on the Lower Colorado River and Tributaries, 2014 to 2018 Summary Report. Submitted to the Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada, by S.E. McNeil, D. Tracy, J. Lisignoli, and J.R. Stanek under Reclamation contract No. R14PD0004.

Piaggio, A.J. and S.L. Perkins. 2005. Molecular phylogeny of North American long-eared bats (Vespertilionidae: Corynorhinus); inter- and intraspecific relationships inferred from mitochondrial and nuclear DNA sequences. Molecular Phylogenetics and Evolution 37:762–775.

Reclamation (see Bureau of Reclamation).

SWCA Environmental Consultants. 2019. Riparian Bird Surveys at Conservation Areas in the Lower Colorado River Region, 2018. Submitted to the Lower Colorado River Multi-Species Conservation Program, Bureau of Reclamation, Boulder City, Nevada, by SWCA Environmental Consultants, Flagstaff, Arizona, under contract No. R17PC00026.